Permit Fact Sheet

General Information

Permit Number:	WI-0024791-10-0	
Permittee Name:	CITY OF MINERAL POINT	
Address:	137 High Street, Suite One	
City/State/Zip:	Mineral Point WI 53565	
Discharge Location:	East bank of Brewery Creek, approximately ¼ mile downstream of the Jackson Street bridge.	
Receiving Water:	Brewery Creek	
Stream Flow ($Q_{7,10}$):	0.75 cfs	
Stream Classification:	Limited Aquatic Life	
Design Flow(s)	Monthly Maximum	0.353 MGD
	Annual Average	0.698 MGD
Significant Industrial Loading?	None	
Operator at Proper Grade?	Facility is Basic with subclasses A2 – Attached Growth Processes, B – Solids Separation, C – Biological Solids/Sludges, SS – Sanitary Sewage Collection System. One operator is certified in the required subclasses. An individual with subclass SS certification and OIC designation due by the end of the permit term.	
Approved Pretreatment Program?	N/A	

Facility Description

The City of Mineral Point operates a wastewater treatment facility that serves a population of approximately 2500 residents with no significant industrial contributors. The facility provides treatment for a combination of domestic and some commercial wastewater. Treatment consists of mechanical screening and grit removal, primary clarification, biotower, and final clarification prior to discharge to Brewery Creek. Sludge that is produced is anaerobically digested and stored on-site prior to land application on Department approved sites.

Sample Point Designation		
Sample Point Number	**Discharge Flow, Units, and Averaging Period**	**Sample Point Location, Waste Type/sample Contents and Treatment Description (as applicable)**
701	0.288 MGD (May 2014 – May 2019 Average)	Representative influent samples shall be collected after the fine screen.
001	0.286 MGD (May 2014 – May 2019 Average)	Representative effluent composite samples shall be collected downstream of effluent parshall flume and grab samples shall be collected after the cascade aerator.

Sample Point Designation		
Sample Point Number	**Discharge Flow, Units, and Averaging Period**	**Sample Point Location, Waste Type/sample Contents and Treatment Description (as applicable)**
002	51.8 Dry US Tons (2019 Permit Application)	Anaerobically digested, Liquid, Class B. Representative sludge samples shall be collected from the digester sampler tap.

1 Influent - Proposed Monitoring

Sample Point Number: 701- INFLUENT

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Continuous	Continuous	
BOD5, Total		mg/L	3/Week	24-Hr Flow Prop Comp	
Suspended Solids, Total		mg/L	3/Week	24-Hr Flow Prop Comp	

Changes from Previous Permit:

None.

Explanation of Limits and Monitoring Requirements

BOD_5 & Total Suspended Solids – Tracking of BOD_5 and TSS is required for percent removal tracking requirements found in s. NR 210.05, Wis. Adm. Code and Section 5.4.6 of the permit. These are standard monitoring requirements for a municipal treatment facility of this size.

2 Surface Water - Proposed Monitoring and Limitations

Sample Point Number: 001- EFFLUENT

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Continuous	Continuous	
BOD5, Total	Daily Max	30 mg/L	3/Week	24-Hr Flow Prop Comp	
BOD5, Total	Monthly Avg	15 mg/L	3/Week	24-Hr Flow Prop Comp	

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Suspended Solids, Total	Daily Max	30 mg/L	3/Week	24-Hr Flow Prop Comp	
Suspended Solids, Total	Monthly Avg	20 mg/L	3/Week	24-Hr Flow Prop Comp	
pH Field	Daily Max	9.0 su	3/Week	Grab	
pH Field	Daily Min	6.0 su	3/Week	Grab	
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	11 mg/L	3/Week	24-Hr Flow Prop Comp	April 1 through October 31
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	18 mg/L	3/Week	24-Hr Flow Prop Comp	November 1 through March 31
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	3.4 mg/L	3/Week	24-Hr Flow Prop Comp	April 1 through April 30
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	5.7 mg/L	3/Week	24-Hr Flow Prop Comp	May 1 through October 31
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	8.5 mg/L	3/Week	24-Hr Flow Prop Comp	November 1 through March 31
Phosphorus, Total	Monthly Avg	0.8 mg/L	3/Week	24-Hr Flow Prop Comp	This is an interim MDV limit effective immediately. See the MDV subsections and phosphorus schedules.
Phosphorus, Total		lbs/day	3/Week	Calculated	Report daily mass discharged using Equation 1a. in the "Water Quality Trading (WQT)" section.
WQT Credits Used (TP)		lbs/month	3/Week	Calculated	Report WQT TP Credits used per month using Equation 2c. in the "Water Quality Trading (WQT)" section. Available TP Credits are specified in Table 2 and in the approved Water Quality Trading Plan.
WQT Computed Compliance (TP)	Monthly Avg	0.225 mg/L	Monthly	Calculated	Limit is effective October 1, 2021. Report the WQT TP Computed Compliance value using Equation 4a. in the "Water Quality Trading (WQT)" section. Value

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
					entered on the last day of the month.
WQT Computed Compliance (TP)	6-Month Avg	0.075 mg/L	Monthly	Calculated	Limit is effective October 1, 2021. Value entered on the last day of the month.
WQT Computed Compliance (TP)	6-Month Avg	0.22 lbs/day	Monthly	Calculated	Limit is effective October 1, 2021. Report the WQT TP Computed Compliance value using Equation 4b. in the "Water Quality Trading (WQT)" section. Value entered on the last day of the month.
WQT Credits Used (TP)		lbs/yr	Annual	Calculated	The sum of total monthly credits used may not exceed Table 2 values listed below.
Chloride		mg/L	2/Month	24-Hr Flow Prop Comp	Jan.1 2023 – Dec. 31, 2023. Monitor Only.

Changes from Previous Permit

Water Quality Trade permit requirements have been added because the permittee is using water quality trading to comply with Total Phosphorus water quality-based effluent limits.

Explanation of Limits and Monitoring Requirements

Please refer to the Water Quality Based Effluent Limits memo prepared by Sarah Luck, dated August 1, 2019 for the detailed calculations and explanation.

> Note: Throughout this fact sheet all citations of administrative code, for example, s. NR 102.06, Wis. Adm. Code, will be referenced as s. NR 106.02, and reflect current Wisconsin Administrative Code.

Categorical Limits

BOD_5, Total Suspended Solids, pH, Dissolved Oxygen – No changes are recommended in the categorical permit limitations for BOD_5, TSS, pH, and DO. Because the reference effluent flow rates and receiving water characteristics have not changed, limitations for these water quality characteristics do not need to be re-evaluated at this time. Where the receiving water is classified as Limited Aquatic Life as defined in s. NR 104.02(3)(b), the categorical limits for BOD_5, TSS, pH, and DO are those limits enumerated in ss. NR 210.05(3)(a) – (d).

Water Quality Based Limits

Phosphorus – Phosphorus requirements are based on the Phosphorus Rules that became effective December 1, 2010 as detailed in NR 102 Water Quality Standards and NR 217 Effluent Standards and Limitations for Phosphorus. Chapter NR 217 of the Wis. Adm. Code addresses point source dischargers of phosphorus to surface waters. Currently in NR 217 Wis. Adm. Code there are two methods used to determine if a phosphorus limit is needed: a technology based effluent limit (TBEL) and a water quality based effluent limit (WQBEL). Based on the size and classification of the stream, the water

quality criteria for Brewery Creek is 75 ug/L. In this case, the WQBEL is 0.225 mg/L (monthly average), 0.075 mg/L & 0.22 lbs/day (6-month average). For the reasons explained in the April 30, 2012 paper entitled 'Justification for Use of Monthly, Growing Season and Annual Average Periods for Expression of WPDES Permit Limits for Phosphorus Discharges in Wisconsin', WDNR has determined that it is impracticable to express the phosphorus WQBEL for the permittee as a maximum daily, weekly or monthly value. The final effluent limit for phosphorus is expressed as a six-month average. It is also expressed as a monthly average equal to three times the derived WQBEL (which equates to 0.225 mg/L). This final effluent limit was derived from and complies with the applicable water quality criterion. A phosphorus concentration limit is necessary to prevent backsliding during the term of the permit.

The wastewater treatment facility is not able to meet the WQBEL. This permit authorizes the use of trading as a tool to demonstrate compliance with the phosphorus WQBELs. This permit includes terms and conditions related to the Water Quality Trading Plan (WQT-2020-0011) or approved amendments thereof. The total 'WQT TP Credits' available are designated in the approved WQT Plan. The WWTF is implementing agricultural non-point practices. The WQT Plan proposes the generation of 754 lbs/year of phosphorus credits for the next five years.

Additional WQT subsections in the permit provide information on compliance determinations, annual reporting and re-opening of the permit.

Ammonia – Current acute and chronic ammonia toxicity criteria for the protection of aquatic life are included in Tables 2C and 4B of ch. NR 105, Wis. Adm. Code. Subchapter IV of ch. NR 106 establishes the procedure for calculating water quality based effluent limitations (WQBELs) for ammonia.

3 Land Application - Proposed Monitoring and Limitations

Municipal Sludge Description						
Sample Point	**Sludge Class (A or B)**	**Sludge Type (Liquid or Cake)**	**Pathogen Reduction Method**	**Vector Attraction Method**	**Reuse Option**	**Amount Reused/Disposed (Dry Tons/Year)**
002	B	Liquid	Anaerobic Digestion	Volatile Solids Reduction/ Injection	Land Application	51.8
Does sludge management demonstrate compliance? **Yes**						
Is additional sludge storage required? **No**						
Is Radium-226 present in the water supply at a level greater than 2 pCi/liter? **No** If yes, special monitoring and recycling conditions will be included in the permit to track any potential problems in land applying sludge from this facility						
Is a priority pollutant scan required? **No**, design flow is less than 5 MGD (0.353 MGD). Priority pollutant scans are required once every 10 years at facilities with design flows between 5 MGD and 40 MGD, and once every 5 years if design flow is greater than 40 MGD.						

Sample Point Number: 002- SLUDGE

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
PCB Total Dry Wt	Ceiling	50 mg/kg	Once	Composite	
PCB Total Dry Wt	High Quality	10 mg/kg	Once	Composite	
Solids, Total		Percent	Annual	Composite	
Arsenic Dry Wt	Ceiling	75 mg/kg	Annual	Composite	
Arsenic Dry Wt	High Quality	41 mg/kg	Annual	Composite	
Cadmium Dry Wt	Ceiling	85 mg/kg	Annual	Composite	
Cadmium Dry Wt	High Quality	39 mg/kg	Annual	Composite	
Copper Dry Wt	Ceiling	4,300 mg/kg	Annual	Composite	
Copper Dry Wt	High Quality	1,500 mg/kg	Annual	Composite	
Lead Dry Wt	Ceiling	840 mg/kg	Annual	Composite	
Lead Dry Wt	High Quality	300 mg/kg	Annual	Composite	
Mercury Dry Wt	Ceiling	57 mg/kg	Annual	Composite	
Mercury Dry Wt	High Quality	17 mg/kg	Annual	Composite	
Molybdenum Dry Wt	Ceiling	75 mg/kg	Annual	Composite	
Nickel Dry Wt	Ceiling	420 mg/kg	Annual	Composite	
Nickel Dry Wt	High Quality	420 mg/kg	Annual	Composite	
Selenium Dry Wt	Ceiling	100 mg/kg	Annual	Composite	
Selenium Dry Wt	High Quality	100 mg/kg	Annual	Composite	
Zinc Dry Wt	Ceiling	7,500 mg/kg	Annual	Composite	
Zinc Dry Wt	High Quality	2,800 mg/kg	Annual	Composite	
Nitrogen, Total Kjeldahl		Percent	Annual	Composite	
Nitrogen, Ammonium (NH4-N) Total		Percent	Annual	Composite	
Phosphorus, Total		Percent	Annual	Composite	
Phosphorus, Water Extractable		% of Tot P	Annual	Composite	
Potassium, Total Recoverable		Percent	Annual	Composite	

Changes from Previous Permit:

New timeframe for monitoring PCBs is now calendar year 2021.

Explanation of Limits and Monitoring Requirements

Requirements for land application of municipal sludge are determined in accordance with ch. NR 204 Wis. Adm. Code. Ceiling and high-quality limits for metals in sludge are specified in s. NR 204.07(5). Requirements for pathogens are specified in s. NR 204.07(6) and in s. NR 204.07 (7) for vector attraction requirements. Limitations for PCBs are addressed in s. NR 204.07(3)(k).

Water Extractable Phosphorus – Water extractable phosphorus (WEP) is the coefficient for determining plant available phosphorus from measured total phosphorus. In Wisconsin, the Penn State Method is utilized and is expressed in percent. While a total P may be significant, the WEP may show that only a small percentage of the P is available to plants because of factors such as treatment processes and chemical addition that "tie-up" phosphorus limiting the amount of phosphorus that is plant available. As part of the Wisconsin's nutrient management plan (NMP) requirements, the accounting of all fertilizers must be included over the NMP cycle. The fertilizer value of the waste needs to be communicated to the farmer and accounted for in the NMP.

4 Schedules

4.1 Annual Water Quality Trading (WQT) Report

The permittee is required to optimize performance to control phosphorus discharges per the following schedule.

Required Action	Due Date
Annual WQT Report: Submit an annual WQT report that shall cover October 1 through December 31, 2021. The WQT Report shall include: The number of pollutant reduction credits (lbs/month) used each month of the previous year to demonstrate compliance; The source of each month's pollutant reduction credits by identifying the approved water quality trading plan that details the source; A summary of the annual inspection of each nonpoint source management practice that generated any of the pollutant reduction credits used during the previous year; and Identification of noncompliance or failure to implement any terms or conditions of this permit with respect to water quality trading that have not been reported in discharge monitoring reports.	01/31/2022
Annual WQT Report #2: Submit an annual WQT report that shall cover the previous year.	01/31/2023
Annual WQT Report #3: Submit an annual WQT report that shall cover the previous year.	01/31/2024
Annual WQT Report #4: Submit the 4th WQT report covering the period from January 1 through September 30, 2024. If the permittee wishes to continue to comply with phosphorus limits through WQT in subsequent permit terms, the permittee shall submit a revised WQT plan including a demonstration of credit need, compliance record of the existing WQT, and any additional practices needed to maintain compliance over time.	09/30/2024
Annual WQT Report Required After Permit Expiration: In the event that this permit is not reissued by the expiration date, the permittee shall continue to submit annual WQT reports by January 31 each year covering the total number of pollutant credits used, the source of the pollution reduction credits, a summary of annual inspection reports performed, and identification of	

noncompliance or failure to implement any terms or conditions of the approved water quality trading plan for the previous calendar year.	

4.1.1 Explanation of Annual Water Quality Trading (WQT) Report

Subchapter NR 217.17, Wis. Adm. Code, allows the department to provide a schedule of compliance for water quality based phosphorus limits where the permittee cannot immediately achieve compliance. Schedules 4.1 is necessary for Water Quality Trading to ensure the practice(s) is/are generating credits and the appropriate counties are receiving the scheduled payments.

Attachments:

Substantial Compliance Determination

Map(s)

Water Quality Based Effluent Limits

Public Notice

Proposed Expiration Date:

A permit term of five years is proposed in this reissuance with an expiration date of September 30, 2024.

Justification of Any Waivers from Permit Application Requirements

No waivers were requested from permit application requirements.

Prepared By:

Sean Spencer – Wastewater Specialist

Date: 9/15/2020

cc: Nathan Wells